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Effects Of A Health Program On Dietary Behaviors, Physical Activity, And Weight Loss In College Students

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EFFECTS OF A HEALTH PROGRAM ON DIETARY BEHAVIORS, PHYSICAL ACTIVITY, AND WEIGHT LOSS IN COLLEGE STUDENTS

MCCALLISTER

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Effects of a health program on dietary behaviors,

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BY

Megan A. McCallister

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ABSTRACT

The 2003 National College Health Risk Behavior Survey suggests that 35% of college students may be overweight/obese. The purpose of "The Biggest Loser: You Gotta Lose It to Win It" was to assist college students to become nutritionally and physically healthier. A needs assessment reported a weight-loss program to be the number one requested type of program by students. "The Biggest Loser: You Gotta Lose It to Win It", a ten-week weight-loss study was implemented due to this needs assessment. This study applied nutrition and physical activity education to assist with a healthy weight loss in three phases (initial, middle, and final). Eighty-eight students started the study; eight completed the study. The results revealed a total loss of 90 pounds and 28% body fat. Additionally, the results indicate goal setting as an effective means of weight loss and a positive increase in EAT-26 scores. A significant increase in physical activity level was not seen. The findings suggest a weight loss project geared towards college students to be effective, but further research needs to be conducted to assess dietary behavior, physical activity, and weight loss programs among the college age population.

DEDICATION

This work is dedicated to my mother, Dr. Pat McCallister, my sister, Ingrid, and my fiancé, John Klemm who all inspired me to continue my education, had continual patience, and always an open ear during the weight loss study and writing of this manuscript.

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CHAPTER 1

INTRODUCTION

The college age is a crucial time period in many aspects. College students are at the age when stepping into independence and making lifestyle changes will impact them for a lifetime. College students are faced with erratic daily schedules, all-you-care-to-eat dining halls, late nights, lots of homework, and the challenges of "fitting in." Unhealthy behaviors such as skewed eating habits, late night munchies, free time spent on activities other than physical activity, and binge drinking and eating episodes can ultimately arise.

These and other barriers exist for the college population (Cousineau, Goldstein, & Franko, 2004) causing many young adults on college campuses to not meet dietary intake and/or physical activity recommendations (Dinger, 1999). According to data collected by the Behavioral Risk Factor Surveillance System, the greatest increases of persons in the United States who are overweight or obese are between the ages of 18 to 29 years of age (Racette, Deusinger, Strube, Highstein, & Deusinger, 2005). The National College Health Risk Behavior Survey suggests that 35% of college students may be overweight or obese (Huang, Harris, Lee, Nazir, Born, & Kaur, 2003).

The "Freshman 15" is a common concept feared on college campuses. The above concept and the media's negative portrayal of an ideal body image consisting of a thin woman and masculine male, lead many college students to indulge in fad diets and unhealthy weight loss programs to avoid weight gain or to lose weight previously gained during college. The National College Health Risk Behavior Survey stated that 46.4% of college students were attempting weight loss at the time of the survey (Huang et. al, 2003). In addition, approximately half (53.6%) of college students had exercised either

to lose weight or to keep from gaining weight during the 30 days preceding the survey. Specifically at Eastern Illinois University, the most requested program by students was a weight loss program (Goetze, 2005).

Researchers have revealed that individuals will not modify their physical activity behaviors simply at the request of others (Keating, Guan, Pinero, & Bridges, 2005). Pinto and Marcus (1995) determined the percentage of university students who are inactive to be as high as 46%. Thus, a strategy to develop a program to increase physical activity was crucial. Along with physical activity, a program to assist with nutrition and weight concerns of the college population was deemed necessary to assist with healthy weight loss and improve the lifestyles of this population now and in the future.

Purpose

The purpose of the study was to measure the effectiveness of "The Biggest Loser" on health lifestyles of the students with the intent of participants making behavior changes to become nutritionally and physically healthier.

Research Questions and Hypotheses

The questions and hypotheses for each question asked in this study were as follows:

1) To what extent does attending nutrition education programs provide assistance in making a positive behavior and attitude change toward a healthy lifestyle?
    a. Those who attend a higher number of presentations will have an increase in physical activity compared to those who attended fewer presentations.

b. Participation in "The Biggest Loser" program will lead to positive changes in the participants' eating attitudes and behavior as measured by the EAT-26 (Garner & Garfinkel, 1979).

2) To what extent does a weight-loss program aid the traditional college age student in losing weight and body fat?

   a. Weight and body fat percentage will decrease after participation in "The Biggest Loser".

3) To what extent does setting goals assist the participant of the weight-loss program in losing more weight?

   a. If weight loss is related to goal setting, then people who set weight-loss goals will lose more weight.

Significance

The obesity epidemic is ever rising and is even a leading national health threat. The National Center for Health Statistics reports that 60 million people are obese in the U.S. with many more who are overweight (Duyff, 2007). Not only is this issue a burden to one's health, but also an increasing financial burden both individually and nationally. Americans spend more than $33 billion each year on weight-loss products and services (Cunningham, 2001). Researchers also estimated approximately $75 billion was spent in 2003 on obesity-related medical expenditures (Levi, Chan, & Pence, 2006).

Results of a needs assessment conducted at Eastern Illinois University indicated that weight management was the number one perceived nutrition-related issue by both students and health professionals (Goetze, 2005). The creation of a campaign that would

assist college students in becoming healthier now and serve as a prevention tool for the future was recommended.

The results of the proposed campaign will be beneficial to the Nutrition Education Coordinator as well as other health professionals on Eastern Illinois University's campus, and could serve as a model for use on other campuses.

Definition of terms

The terms defined in this study included:

- Body mass index (BMI) was calculated according to the following formula: BMI=Weight (kg)/Height (m^2) (Charney & Malone, 2004)

The different ranges for BMI are as follows:

- obesity: BMI $\geq$ 30kg/m^2 (Charney & Malone, 2004)
- overweight: BMI = 25.0-29.9kg/m^2 (Charney & Malone, 2004)
- normal weight: BMI = 18.5-24.9kg/m^2 (Charney & Malone, 2004)
- underweight: BMI <18.5kg/m^2 (Charney & Malone, 2004)

Physical activity is defined in terms of four levels.

- Sedentary is most time spent at rest, lying down or sitting with minimal movement (i.e.; watching TV, reading, studying…) (ESHA Research, 2003).
- Lightly active is the level that includes most office workers, professionals, and students; daily activities consist of approximately 8 hours of sleep and 16 hours awake, including 3 hours of light activity (i.e.; walking, house chores, cooking…) and 1 hour of moderately intense activity (i.e.; running, rollerblading, walking briskly…) (ESHA Research, 2003).

- Moderately active level includes most people who work in manual labor fields (i.e.; carpentry, construction, or building trades…) and/or those people who average 1 ½ - 2 hours of moderate exercise 3 or more times per week (i.e.; elliptical machine, weight lifting, running…) (ESHA Research, 2003).
- Very active activity level includes most full-time athletes or others who are involved in very strenuous activity on a daily basis (ESHA Research, 2003).

Assumptions

The researcher assumed the majority of participating students in the study would be female. A second assumption was that the participants would be interested in the study and find the programs offered appealing. The participants would attend the minimum 10 (out of 75) programs offered. Further, the participants would take the knowledge they learned and apply it to their lifestyle over a week-long holiday break and return to the study for the final weigh-in. Finally, the researcher assumed the participants would complete all questionnaires entirely and honestly.

CHAPTER 2

LITERATURE REVIEW

This review focuses on why a program was created to assist college students to become nutritionally and physically healthier. The barriers to healthy dietary behaviors, physical activity and eating attitudes of college students were addressed. The significance of overweight/obesity and what is currently being done to help decrease the epidemic were investigated. The intervention of nutrition education programs and goal setting in terms of the effectiveness of assisting in behavior changes was reviewed.

Healthy Dietary and Physical Activity Barriers

Barriers exist for college students to achieve recommended dietary intake and/or physical activity recommendations. These barriers range from habits learned as a child, time or lack thereof, busy schedules and schedule conflicts, high workloads, and cost. Recognizing these barriers is key to supporting college students becoming nutritionally and physically healthier.

The most influential source of nutrition information while growing up is from the home, family, and/or caregiver. Habits learned as a child persist throughout his/her life. Habits, such as cleaning the plate, using food as incentives, unhealthy eating and snacking, and eating dessert can cause the "detrimental to your health" habits to form at a very young age (Cason & Wenrich, 2002). Branen and Fletcher (1999) supported these "detrimental to your health" habits with a sample of 546 undergraduate students who completed a survey of current eating habits related to their recollection of caregivers' feeding practices and their own. The survey determined the dietary practices of the college student were dependent upon the caregivers. As a child ages, his or her peers

become more influential than the family and these peer influences can also have a negative affect on food choices (Cason & Wenrich, 2002).

A perceived lack of time is a major factor affecting a multitude of life's decisions, especially nutrition. Class, organizations, commitments, sports and dining halls hours of operation conflicts can be a deterrent to receiving proper nutrition. Beerman, Jennings, and Crawford (1990) conducted a study of 152 men and women, of which 61% who reported skipping meals stated the reason was due to lack of time. Specifically, at EIU, students who took the Panther Dining Survey stated they wanted to see the dining halls open later because they were not able to make a trip to eat before the dining halls closed for an evening (Panther Dining, 2005).

Irregular schedules are another barrier existing for college students. Classes are scheduled Monday, Wednesday, Friday, and then on Tuesday and Thursday. This type of class schedule can disrupt a regular daily schedule from occurring. Moreover, many times on the weekends, students stay up late and sleep in. During these late nights, disordered eating behaviors, such as, binge drinking and high fat and calorie eating episodes often occur, deterring college students from consuming proper nutrition or participating in physical activity.

Cost of food is another issue for students when trying to eat healthy. Many students live on a fixed budget, especially when it comes time to grocery shop. Students report that money inadequacies exist when purchasing food. Additionally, the price of food and/or meals and adequate financial resources are of concern to eating healthy (Betts, Amos, Georgiou, Hoerr, Ivatuni, & Keim, et al., 1995). Usually, the less expensive foods are the foods that are not as healthy, which most college students can

afford. Additionally, most college students assume the generic brand of healthy food is either not as good for you or tasteless compared to the name brand. This can deter a college student from purchasing the food because the cost of the name brand is too expensive.

High workloads and the unavailability of team sport participation in college can exist as a barrier for achieving physical activity recommendations. Students reported it hard to balance work, school, and leisure activities with time to eat (Betts et al., 1995). This allows less time for students to spend personal time exercising due to the pressure of achieving good grades. Lawrence and Schank (1993) found the primary reason college-age women did not participate in the recommended levels of physical activity was lack of time. Additionally, the lack of team sports available in college, as compared to high school, is a barrier to participating in recommended levels of physical activity (NASPE, 2007).

The anticipated "Freshman 15" can be seen as another barrier to maintaining a healthy diet. The "Freshman 15" is the possible 15 pounds gained during a student's first year (freshman) of college (Hoffman, Policastro, Quick, & Lee, 2006). This traditional phrase regarding to the weight gain that many college students experience during the first and even second semester of the freshman year has been shown to be an average about seven pounds instead of 15 (Hoffman, Policastro, Quick, & Lee, 2006).

Many barriers exist for college students to achieve the recommended minimum daily level of physical activity and adequate nutrition. Helping college students face these barriers and influences can assist college students in becoming nutritionally and

physically healthier, especially since this is a time when college students are still forming lifestyle patterns (Huang et al. 2003).

Dietary Behaviors

Dietary behaviors change as a student begins college. An increase in energy and fat consumption may occur due to the all-you-care-to-eat options in dining centers and/or increased alcohol intake (Hoffman, Policastro, Quick, & Lee, 2006).

Students report that nutritious foods may not be as readily available as the less nutritious foods. Research conducted within university dining centers has concluded the majority of students say they want healthy foods, but prefer the unhealthier foods. Thus, the university dining centers must serve what the majority of students want. The top three food items most commonly ordered from the U.S. FoodService's are chicken tenders, French fries, and carbonated beverages. Additionally, Washington State University, Texas Christian University, Cornell University, and Ball State University state their most popular food items are pizza, French fries, hamburgers, and chicken strips, even when healthy food options are available (Farrel, 2002). At EIU the most liked food item offered is the late night make your own pizza (Panther Dining, 2005).

Additionally, according to the National College Health Risk Behavior Survey, approximately 20% of students (n = 4,609) consumed three or more higher fat foods (hamburgers, hot dogs, or sausage; French fries or potato chips; and cookies, doughnuts, pie, or cake) the day preceding the survey (Douglas & Collins, 1997). The populations within the college age who frequently consume these high fat foods are males and students who live in the residence halls (Dinger, 1999). This may be due to the fact that

males do not see food-choice decisions as important or relevant as females (Levi, Chan, & Pence, 2006).

As these higher fat and caloric foods are being consumed, college students are not consuming enough from the other food groups. Of the students (n=4,609) who took the National College Health Risk Behavior Survey, 73.7% failed to consume five or more servings of fruits and vegetables (fruit, fruit juice, green salad, and cooked vegetables) the day preceding the survey (CDC, 1997). Additionally, two thirds of the participants surveyed by Huang et al. (2003) consumed less than five servings of fruits and vegetables a day. Females and residence hall residents with wellness center memberships consumed more fruits and vegetables than males and fraternity and sorority housing residents (Dinger, 1999). This may be due to females considering their food selections as more important and relevant than males (Levi, Chan, & Pence, 2006).

Besides consuming high fat and caloric foods and not consuming enough fruits and vegetables, Schuette and Song (1996) reported 89% of 2489 female and male students consumed less than the recommend number of servings in more than one food group (Grains, Vegetables, Fruits, Dairy, and Meat and Beans). On average, college students consumed the minimum number of servings for the Dairy group and didn't meet the minimum number of servings for the other food groups (Cotugna & Vickery, 1994).

Beyond not consuming enough from all or some of the food groups, college students are skipping meals. Huang, Song, Schemmel, and Hoerr (1994) reported that 20.3% of males and 21.5% of females acknowledged skipping breakfast, 6.3% and 8.1% of males and females respectively, skipped lunch, and 3.1% of males and 4.8% of females admitted to skipping dinner.

It can be assumed that some weight can be gained due to consuming high fat foods, not consuming enough from all or some of the food groups and skipping meals. Additionally, even a moderate imbalance of energy intake and energy expenditure can result in an increase in body weight and fat mass. Just consuming approximately 112 extra calories per day, which is about the number of calories found in a regular soda, a beer, or a slice of pizza, can cause a weight gain. This weight gain was found in a study by Hoffman, Policastro, Quick, and Lee (2006). The 67 freshman college students who completed "Freshman 15" measurements had a mean weight gain of seven pounds during the seven-month study. Relatively small changes during the freshman year can add up over the college years. This can detrimentally lead to more weight gained throughout college.

College students state they want to eat healthier and would do so if the dining centers would provide those food options (Cason & Wenrich, 2002). The dining centers have provided the food, but find the majority of students still prefer the unhealthier options available. The consumption of unhealthy foods or even just a small increase in energy intake as compared to expenditure can cause a weight gain during the college years (Graham & Jones, 2002). A weight gain or desire to prevent weight gain may alter eating attitudes of college students.

Assessment of Eating Attitudes

The Eating Attitudes Test (EAT), developed by Garner and Garfinkel in 1979, later modified to the Eating Attitudes Test– 26 (EAT-26) (Garner, Olmstead, Bohr, Garfinkel, 1982), is an objectively scored test used to screen for the possibility of eating disorders. The original EAT (EAT-40) consisted of 40 questions, which was used to

assess characteristics and eating behaviors of patients with anorexia nervosa. In a study of 81 eating disorder and "normal" participants, the EAT-26 and EAT-40 were compared to determine the relevance of the two tests. This study concluded the EAT-26 is a reliable substitute for the EAT-40 (Berland, Thompson, & Linton, 1986). Additionally, the study conducted by Berland, Thompson, and Linton (1986) supported the previous study conducted by Garner, Olmstead, and Polivy (1982) stating the EAT-26 is just as reliable of a tool as the EAT-40 when screening for eating disorders.

The EAT-26 has been used to assess eating attitudes of college students. A study on eating attitudes in 342 college males found that 12 males who took the EAT-26, scored in the eating disorder range. When males participated in sports and body building, their scores were significantly elevated. Interestingly, similar results were also evident in males who had a past history of obesity (Franco, Tamburrino, Carroll, Bernal, 1988).

Females are often challenged to meet the socially acceptable standards of thin women that are so commonly portrayed by the media (Cason & Wenrich, 2002). A question asked by researchers Greenleaf and McGreer (2006) was "Do those who participate in regular physical activity have more disordered eating attitudes than those who lead sedentary lifestyles?" One hundred eighty-five female college students completed a survey packet including the EAT-26. These females were split into either a physically active or sedentary lifestyle group. No difference was found between the physically active or sedentary lifestyle groups in terms of eating behaviors. However, females who reported having high self-objectification ("the act of viewing the self, particularly the body, from a third-person perspective") (Quinn, Kallen, Twenge, &

Fredrickson, 2006) reported more disturbed eating attitudes (anorexia nervosa, bulimia nervosa, and binge eating) than females who had lower self-objectification.

A simple phrase, such as the "Freshman 15," may distort a person's thoughts about eating behaviors and promote a negative body image before a student starts their first day of college. A study with freshman students who were contacted the first two weeks of their college career completed a survey on eating attitudes. The survey revealed those who were concerned about gaining the "Freshman 15" were more likely to have a poorer body image, and were at or close to the eating disorder range on the EAT-26 (Graham & Jones, 2002).

There are several factors as to why a college student would have disordered eating attitudes. Sports, extra curricular activities, media, "Freshman 15", and lifestyle could all be culprits as to why college students could have altered eating attitudes. In addition to altered eating patterns, college students do not usually participate in the daily recommended levels of physical activity.

Physical Activity

At least 30 minutes of physical activity on most days at a moderate activity level reduces chronic disease risks. Sixty minutes of moderate to vigorous activity on most days helps prevent unhealthy weight gain (Duyff, 2007). The CDC stated that only 25% of adults in the U.S. engage in the recommended levels of physical activity (Racette et. al, 2005). Additionally, Stephens, Jacobs, and White (1985) suggest that a rapid decline in physical activity occurs between the ages of 18 and 24.

However, 1190 college students who took the National College Health Risk Behavior Survey in a study conducted by Dinger (1999) reported more frequent

participation in physical activity throughout the preceding week than students nationally who had taken the National College Health Risk Behavior Survey.

Buckworth (2004) concluded that male sample participants reported higher levels of exercise, but more time spent viewing television and computer usage compared to females. Again with males, a negative association was seen between computer use and days per week with exercise and physical activity. However, a positive association was established between TV watching and time spent studying for males. Male students also reported to engage in more aerobic exercise than female students in a study by Huang et al. (2003). Thus, males seemed to engage in more physical activity. However, physical activity and exercise was reported occurring less than three days per week.

Older college students (21-24 years old) self-reported more time using a computer compared to physical activity. The younger college student (18-20 years old) population self-reported more participation in physical activity as compared to computer usage (Buckworth, 2004). Huang et al. (2003) stated that students less than 19 years of age engaged in more physical activity than those participants over the age of 20. For women, a negative correlation existed between age and duration, intensity, and days spent exercising over the past year.

The students who lived in the residence halls and were non-fraternity and sorority members reported higher levels of moderate physical activity more frequently than fraternity and sorority members. However, the students who were fraternity and sorority members and/or lived in the fraternity and sorority housing participated in more vigorous physical activity than those who were not fraternity and sorority members (Dinger, 1999).

Almost 60% of undergraduate students rated their stress levels to be high. These high stress levels can attribute to students engaging in unhealthy methods of relieving stress, or as some may know it, emotional eating. Previous research has supported physical activity as an effective means of reducing anxiety and stress. If students participate in the recommended 30 minutes of physical activity a day, their stress levels can be decreased (Smith, Hauenstein, & Buchanan, 1996).

There are many factors that play a role as to whether a college student does or does not meet the recommended 30 minutes a day of physical activity as set by the CDC and the American College of Sports Medicine (ACSM). Gender, age, stress, time, and organizations can all factor into an individual's reasoning as to why they do not engage in the minimum physical activity recommendations. The disordered dietary behaviors and participation in less than recommended levels of physical activity can lead to weight gain, which could lead to being overweight or obese.

Prevalence of Overweight/Obesity

There is an increase in overweight and obese individuals in the United States. Results from the NHANES II (1976-1980) indicated that 47% of Americans were overweight and 16% were obese. NHANES data collected in 2003-2004 revealed an increase to 66.2% of Americans as overweight and 32.9% were obese (Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006). As shown, there is a large increase in the number of overweight/obese individuals.

A period of time when weight gain most often occurs for college students is freshman year. But is this "Freshman 15" fact or fiction? A study by Hoffman et al (2006) claimed the weight gain to be true, but not as many as 15 pounds. On average,

students gained approximately seven pounds during the first year of college. If this approximate weight gain is continued through four years of college, students have the potential to gain 27 pounds by the end of their undergraduate career (Hoffman et. al, 2006) which could lead to a BMI of $\geq 25 kg/m^2$.

In a study on overweight and obesity in 736 college students, Huang et. al. (2003) determined males were more likely than females to be overweight but not obese. Also, those males and females over the age of 20 were more likely to be overweight and obese than those who are less than 19 years of age. About half of the participants in this study were found to be either overweight or obese based on BMI.

The National College Health Assessment Survey distributed to 297 students at a midsized Midwestern university reported that 25.8% of the students to be overweight and 8.6% to be obese. Additionally, those students who were over the age of 21 were more likely to be overweight or obese than those who were under 21 years of age. Males were reported to be more overweight or obese than females in this study (Volicer, Quattrocchi, Candelieri, & Nicolosi, 2003), but other previous research has shown that females perceive themselves to be overweight more often than males (Cason & Wenrich, 2002). Could this be due to the stigma for females to be the ideal thin individual portrayed by the media in today's society? Additionally, could this overweight/obesity epidemic be due to ineffective nutrition education targeted towards college students?

Nutrition Education

A nutrition education campaign needs several components to make it successful. Two of the main components for a campaign are goal setting and the application of the theory base.

Previous research has shown that behavioral theory-based nutrition education programs are more successful at attaining food behavior change than knowledge-based programs (Beckman, Hawley, & Bishop, 2006). Successful behavior change programs target one or more of the personal, behavioral, or environmental factors that influence the behavior and relate theory-based strategies to influence or change the factors. Goal setting is often a strategy that is more commonly used to help people change their behavior (Cullen, Baranowski & Prince, 2001).

Goal Setting. The four steps of goal setting are recognizing a need for change, establishing a goal for change, monitoring progress toward achieving the goals, and rewarding self for accomplishing the goal (Cullen, Baranowski, & Prince, 2001). Goals can be assigned by others, set jointly through participation, and/or self-set. Success of goal setting can be tracked by feedback from persons, commitment to the goal, task complexity, and situational constraints (Locke & Latham, 2006). The positives of goal setting have been found substantial in over 40,000 males and females across the world from minute to long-standing goals. According to Locke and Latham (2006) goals are a "key element in self-regulation."

Assigned goal setting has been shown as the best method for adults to establish an effective behavior change in dietary and physical activity practices. Previous research that used goal setting of at least six weeks was rated helpful by participants. In support, these studies provided confirmation that when using goal setting, dietary fat was able to be reduced in the diet (Cullen, Baranowski, & Prince, 2001).

Proximal goal setting was found to help with the largest percentage of weight loss (Shilts, Horowitz, & Townsend, 2004). Using short-term goals in assisting with a

weight loss program has proven more effective than a weight-loss program with only a long-term goal set (Smith, Hauenstein, & Buchanan, 1996).

Therefore, the best method for goal setting was to use assigned goal setting, proximal goal setting, and short term goals to establish an effective nutrition and physical activity behavior change to last long term.

Theory base. The Social Cognitive Theory (SCT), which "The Biggest Loser" study is based, explains how people attain and sustain certain behavioral patterns, while also giving the basis for intervention strategies (Bandura, 1997). The SCT provides the framework for designing, implementing and evaluating programs. This theory is relevant for health behavior programs and a basis for intervention strategies.

The model of SCT is a triadic model displaying the interaction between the influences of an individual and behavior, the interaction between the individual and the environment, and the interaction between the environment and the behavior (Glanz, Lewis, & Rimer, 1997). These three factors are constantly influencing each other and one is not the result of the other.

The concepts of the SCT which help design, implement, and evaluate are as follows: environment, external to the individual; situation, perceptions of the environment; behavioral capability, knowledge and skill; expectations, anticipatory outcome of behavior; expectancies, values placed on outcome; self-control, regulation of goal-directed behavior; observation learning, watching others; reinforcements, responses that increase or decrease the possibility of reoccurrence; self-efficacy, individual's confidence in performing a certain behavior; emotional coping response, and methods used by an individual to deal with emotions (Glanz, Rimer, & Lewis, 2002).

The purpose of using the SCT for "The Biggest Loser" was to assist in providing the framework for designing, implementing and evaluating this study, especially since this theory is relevant for health behavior campaigns with an intervention strategy. The purpose of the study was to assist participants in becoming nutritionally and physically healthier through nutrition education. Additionally, the researcher noted that the environment, individual, and behavior all play a role in any form of weight loss. All three factors needed to be addressed appropriately for each individual to achieve the highest, healthiest weight loss based on each participants needs.

Summary

Recognizing the barriers that college students face in achieving adequate nutrition and optimal physical activity levels, and identifying the current dietary behaviors, physical activity levels, and eating attitudes of college students will benefit both the researcher and the college population. Additionally, with the obesity epidemic on the rise, a surge in health-related diseases could emerge.

CHAPTER 3

METHODOLOGY

The purpose of the study was to measure the effectiveness of "The Biggest Loser" on health lifestyles of the students with the intent of participants making behavior changes to become nutritionally and physically healthier.

Research Questions and Hypotheses

The questions and hypotheses for each question asked in this study were as follows:

1) To what extent does attending nutrition education programs provide assistance in making a positive behavior and attitude change toward a healthy lifestyle?
    a. Those who attend a higher number of presentations will have an increase in physical activity compared to those who attended fewer presentations.
    b. Participation in "The Biggest Loser" program will lead to positive changes in the participants' eating attitudes and behavior as measured by the EAT-26 (Garner & Garfinkel, 1979).
2) To what extent does a weight-loss program aid the traditional college-age student in losing weight and body fat?
    a. Weight and body fat percentage will decrease after participation in "The Biggest Loser".
3) To what extent does setting goals assist the participant of the weight-loss program in losing more weight?
    a. If weight loss is related to goal setting, then people who set weight-loss goals will lose more weight.

Description of Sample

The study was administered to a convenience sample of college students, 22±4.77 years of age, from a mid-western university. The initial 88 participants (73 females, 17 males) were all undergraduate students with a class rank from freshman through senior year. Female participants had an average weight of 190.8 pounds, an average height of 64.8 inches, with a mean initial BMI of 31.6. The male participants had an average weight of 209.2 pounds, an average height of 70 inches, and a mean initial BMI of 30.1.

Design of Study

"The Biggest Loser: You Gotta Lose It to Win It" was based on the current popular television show "The Biggest Loser" (Broom, 2005). Several differences were evident between the television show and this study. "The Biggest Loser: You Gotta Lose It to Win It" was a 10-week weight-loss study implemented at a mid-western university. This weight-loss study promoted healthy nutrition and physical lifestyle changes to assist traditional college-age students in making healthier choices to either prevent weight gain, assist in a healthy weight loss, or support weight maintenance. This study allowed participants to apply healthy nutrition and physical activity knowledge to their daily lives to achieve nutritional and physical health now and for a lifetime.

The study was publicized via flyers, e-mail, newspaper advertisements, and articles, radio promotions, and word of mouth. The data collection method for the study included questionnaires and anthropometric measurements. Data were received in three phases of the study and analyzed based on the anthropometric measurements and responses to the questionnaires.

The design was quasi-experimental using a convenience based sample group of undergraduate students. Data collection commenced in September 2006 and ended in December 2006. The design of the study consisted of three phases: the initial registration phase, the midway phase, and the final phase. Participants had anthropometric measurements taken during each phase and questionnaires were completed and returned during the first and final phase of the study. Both quantitative and qualitative data were collected due to the smaller sample size.

Initial Registration Phase. During this introductory phase the participants (n = 88) completed a pretest questionnaire (Appendix A), goals sheet (Appendix B), and anthropometric measurements (Appendix C) of height, weight, and body fat percentage. The height and weight were used to calculate BMI. These data collection measurements provided baseline data.

Midway Phase. Anthropometric measurements (Appendix C) of participants (n = 30) were collected. Additionally, participants who returned the attendance sheet with a minimum attendance at five health programs, presentations, or workouts were entered for a chance to win an iPod nano.

Final Phase. The third and final phase of the study was considered the completion of the study. The remaining participants (n = 8) had their last anthropometric measurements (Appendix C) taken. The posttest questionnaire (Appendix E) with responses were returned (n = 11) along with the attendance sheets (Appendix D) (n = 11) to the health-related programs.

Instrumentation

There were several different instruments used throughout the study. A pretest (Appendix A) and posttest questionnaire (Appendix E), goals sheet (Appendix B), attendance sheet (Appendix D), and anthropometric measurements (Appendix C) were used to collect data.

Pretest. The initial registration phase of the study consisted of the participants registering. At registration the students completed a pretest questionnaire (Appendix A). The pretest was tested for face validity (Trochim, 2001). Seven graduate students and one health professional reviewed the questionnaire and made recommendations for changes. Changes were made to the questionnaire before administration to participants. The questionnaire was designed to assess the difference between levels of physical activity and participant's attitudes toward food.

One of the questions on the pretest questionnaire screened for possible eating disorders. The EAT–26 (Garner & Garfinkel, 1979) assessment tool is a standardized measure of symptoms and concerns characteristic of individuals with eating disorders (Garner & Garfinkel, 1979). A score of 20 or below is an indicator of possible eating disorders. One participant scored 20, and was referred to the Eating Disorder Treatment Team at the university, and participation was revoked because of his/her score.

Goals Sheet. Interventions that incorporate a goal-setting component support behavior change (Cullen, Baranowski, & Prince, 2001). Therefore, each participant completed a goals sheet (Appendix B) in which the top three goals he/she hoped to achieve through his/her involvement in "The Biggest Loser" were listed. These self-set

goals could be any goal as long as they were health-related and the person believed they could nutritionally and/or physically achieve them during the study.

Anthropometric Measures. Anthropometric measurements (Appendix C) and body composition analyses were performed by eight fitness assessment and appraisal trained graduate students. These graduate students completed the body composition analyses under the supervision of the director of the Assessment Testing and Prescription Lab (ATP) at the university during the first, midway, and final phase. Height, weight, and body fat percentage were calculated using standardized means for each participant. A calibrated scale to analyze weight and bioelectric impedance for body fat percentage were used. The participant's body mass index (BMI) was determined by dividing weight in kilograms by height in m^2. Both weight and BMI were used since measuring change in weight or BMI alone may not be adequate to propose a healthy weight loss. Muscle mass instead of fat may have been lost attributing to a possible unhealthy weight loss (Hoffman, Policastro, Quick & Lee, 2006).

Attendance Sheet. Attendance sheets were to be returned at the midway point (midway phase) and the final week (final phase) of the study. Two blank attendance sheets (see Appendix D) were distributed upon registration. These sheets were to be signed at each presentation, program, or workout by the presenter in the area next to the title of the attended program. The participants were required to attend a minimum of ten (out of 75) approved presentations, programs, and/or workouts to successfully complete the study. Representatives from The School of Family and Consumer Sciences, Health Service, Counseling Center, Kinesiology and Sport Study, Health Education, and persons from local businesses presented the programs.

Posttest. During the final phase, the posttest questionnaire (see Appendix E) was completed and returned. This questionnaire was used to determine if the physical activity of the participants had changed and to determine if the EAT-26 (Garner & Garfinkel, 1979) score had improved. The questionnaire asked for comments to improve the study for future reference.

Data Collection

IRB approval at the midwestern university, file number 06-074, was granted to the researcher. Each participant was given a number upon registration; therefore, all questionnaire data and anthropometric measures were kept anonymous. Since no names were used and all participants were seen on a regular basis, the information was kept confidential.

The pretest questionnaire (Appendix A) and goals sheet (Appendix B) were completed and returned by the participants before the study officially began. These two forms were either returned to the Health Education Resource Center (HERC) or to the Nutrition Educator at the informational meeting held before the onset of "The Biggest Loser". A copy of the goals sheet (Appendix B) was given to each participant as a reminder of the goals he/she had established.

Anthropometric measures (Appendix C) were taken during the first, middle, and final phase of the study at the ATP lab. Each participant was responsible to visit the ATP lab for calculation of his or her height, weight, and body fat percentage. The ATP lab analyzed the body mass index for each participant.

Attendance sheets (Appendix D) were collected voluntarily during the middle phase at the HERC. An incentive of a drawing for an I-Pod Nano was offered to the

participants for return of attendance sheets. This incentive was to assist the participants to stay involved throughout the ten-week study.

During the final phase, the attendance sheets (Appendix D), with the number of presentations, programs, and workouts attended, including the presenter's signatures were returned to the HERC. The posttest questionnaire (Appendix E) was completed and returned to the HERC by the last day of the tenth week of the study.

Data Analysis

The researcher and the Research and Grant Writing Coordinator at the HERC entered the data and analyzed it using The Statistical Package of the Social Sciences (SPSS Version 15.0). Statistical analysis included the following tests: t-tests for dependent means, one way t-tests for independent means, Pearson Correlation, and frequencies.

T-tests for dependent means were used to examine differences in weight and body fat percentage change taken from anthropometric measurements by the ATP lab during the first, midway, and final phases of the study. The t-test for dependent means was used to address Research Question 2, "To what extent does a weight-loss program aid the traditional college-age student in losing weight and body fat?" The t-test for dependent means is a test used when measuring differences between data from two different groups on a single sample when the data are dependent (Salkind, 2000).

One way t-test for independent means was used to examine goals and EAT-26 scores. The goals sheet, which each participant completed during the first phase of the study and the EAT-26 pretest and posttest questionnaire scores were the instruments used to run the analysis. The goals set by each individual were grouped by themes. The

anthropometric measurements taken during the first and final phase of the study were used to assess differences in weight loss, gain, or maintenance. The one way t-test for independent means was run to answer Research Question 3, "To what extent does setting goals assist the participant of the weight-loss study in losing more weight?" and hypothesis "Participation in "The Biggest Loser" will lead to positive changes in the participants eating attitudes and behavior as measured by the EAT-26."

The use of the one way t-test for independent means was to assess the differences in means between groups (Salkind, 2007), such as, between those who set a weight-loss goal and those who did not set a weight-loss goal. This test was also used to measure differences in means between the scores on the EAT-26 from the initial phase to the final phase.

Pearson correlation was used to measure the relation between the attendance to presentations and weight loss. Pearson correlation assumes that two variables are measured on interval scales, and thus, determines the extent to which values of the two variables are proportional to each other (Salkind, 2007). The question from the pretest and posttest questionnaires, "What is your current physical activity level?" was used to run Pearson correlation analysis and answer Research Question 1, "To what extent does attending nutrition education programs provide assistance in making a positive behavior and attitude change toward a healthy lifestyle?"

The significance level for all statistics used in this study was $\alpha = .05$. The significance level of a test is the probability the statistic would be supported. If the test gives a result less than the significance level, the research question and/or hypothesis are

supported, meaning the results are statistically significant. The lower the resulting significance level, the stronger the evidence is supported (Salkind, 2007).

Summary

This study was completed in three phases with several instruments and data collection methods. All data collected was analyzed both quantitatively and qualitatively. The data generated unexpected results.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of the study was to measure the effectiveness of "The Biggest Loser" on health lifestyles of the students with the intent of participants making behavior changes to become nutritionally and physically healthier. The following research questions were addressed:

1) To what extent does attending nutrition education programs provide assistance in making a positive behavior and attitude change toward a healthy lifestyle?
    a. Those who attend a higher number of presentations will have an increase in physical activity compared to those who attended fewer presentations.
    b. Participation in "The Biggest Loser" program will lead to positive changes in the participants eating attitudes and behavior as measured by the EAT-26 (Garner & Garfinkel, 1979).
2) To what extent does a weight loss program aid the traditional college age student in losing weight and body fat?
    a. Weight and body fat percentage will decrease after participation in "The Biggest Loser".
3) To what extent does setting goals assist the participant of the weight loss program in losing more weight?
    a. If weight loss is related to goal setting, then people who set weight loss goals will lose more weight.

Of the 88 original participants, 30 students visited the ATP lab for the middle phase of anthropometric data collection. In the end, eight participants visited the ATP lab

for their measurement collections and 11 participants returned their posttest questionnaire.

Participants were sent weekly reminders via e-mail of the programs, presentations, and workouts approved for the week, along with any reminders as to questionnaires or anthropometric measurements that needed to be taken that week. At each program or presentation the Nutrition Educator was hosting, reminders were given to participants either at the beginning or the end of the session.

Demographic Data

The mean age of the participants was 22 years old. The majority were female (n=73, 83.0%) and 17.0% (n = 15) male. The participants ranged in weight from 115 to 382 pounds with an average weight of 192 pounds and an initial average BMI of 36.

The majority of participants (n= 45, 70.3%) had tried a weight loss diet before, while 18.5% (n=12) of the participants were currently following a diet at the initial registration phase of the study. Many of the participants (n=48, 73.8%) did not believe their diet was nutritionally balanced. Two-thirds of the participants (67.7%) participated in a lightly active level of physical activity before the study began.

Making a Positive Behavior and Attitude Change

Research Question 1 was to determine if attending nutrition education programs provided assistance for college students in making positive health changes. The first hypothesis for question 1, "Those who attend a higher number of presentations will have an increase in physical activity compared to those who attended fewer presentations," did not have a significant correlation level, $r = .21$, $p = .541$. The participants' responses (n=11) with an average attendance to 8 presentations, programs, workouts was not

enough to make appropriate comparisons. Thus, there is not a correlation between the participants (12.5%) and the change in physical activity from the levels of sedentary, lightly active, moderately active, or very active.

Overall results on physical activity intervention are not very encouraging. Previous physical activity interventions such as, Project ARTEC, only observed a moderate impact on the student's current physically activity. The other projects with curriculum based emphasis available in the literature have shown no long-term positive effects of maintaining and/or increasing physical activity among college students (Keating, Guan, Pinero, & Bridges, 2005).

The second hypothesis for question 1, "Participation in "The Biggest Loser" program will lead to positive changes in the participants eating attitudes and behavior as measured by the EAT-26 (Garner & Garfinkel, 1979)" was supported, $t(74) = 2.18$, $p = .03$. A one way t-test for independent samples determined the study had a positive effect on the participant's EAT-26 (Garner & Garfinkel, 1979) scores, indicating the participants eating attitudes improved throughout the study.

Similarly results from the LIFE wellness program to assist in healthy lifestyle changes for military personnel evidenced significant change over the program in terms of eating behaviors, better capability to manage hunger, and cognitive control of eating. However, no significant difference between eating disorder inventory scales was determined (Bowles, Picano, Epperly, & Myer, 2006).

Losing Weight and Body Fat

"The Biggest Loser: You Gotta Lose It To Win It" asked if this study would assist participants in losing weight and body fat percentage. Using t-tests for dependent means, the researcher assessed the differences between phase 1 and phase 2 weights, phase 1 and phase 3 weights, and phase 2 and phase 3 weights (Table 1). In addition, the researcher utilized the same method to assess body fat percentage. A significant difference was found between phase 1 and phase 2 weight levels, $t(27) = 2.61, p = .02$, with a total weight loss of 63 pounds. No other significant differences were observed.

"The Biggest Loser" study had "grand prize" incentives offered for participants. Previous research has shown that if an incentive is provided for the college age population to achieve a particular outcome, then students are more likely to participate. A study by Devahl, King, and Williamson (2005) noticed students had more of a decreased body fat percentage when an award was provided to become physically healthier in terms of losing body fat percentage. Thus, including an incentive is beneficial to assist with decreased body fat percentage.

Goal Setting

The third research question asked if weight loss was related to goal setting. More specifically, the researcher hypothesized that if weight loss was related to goal setting, then people who set weight loss goals would lose more weight. The goals were analyzed qualitatively using a content analysis procedure to identify themes. The major themes of goals set by the participants included (Table 2): lose weight (76.2%); eat healthy or have good nutrition (54%); exercise routine (learning how and proper techniques) (36.5%); have a healthier lifestyle (31.7%); get toned or muscle building (27%); lose body fat

percent (22.2%); gain self confidence, self-esteem, or mental health (19%); physical fitness, energy, stamina, and endurance (19%); lower pant size and lose inches (14.3%); maintenance of these behaviors (12.7%); other (12.7%); improve body image (9.5%), portion sizing (7.9%); and reduce health risk (4.8%).

Table 1
Comparison of weight loss and body fat percentage lost between the three phases

Body Weight (Weight in pounds)					
Phase[a]	Participants[b]	Minimum[c]	Maximum[d]	Mean[e]	Wt Lost[f]
1	(n = 88)	130.5	387.0	193.7	
2	(n = 30)	137.0	240.5	184.5	63*
3	(n = 8)	146.0	213.0	182.7	27
					Total Weight Lost = 90

Body Fat Percentage					
Phase	Participants	Minimum	Maximum	Mean	Body Fat Lost (%)[g]
1	(n = 88)	16.9	48	39.7	
2	(n = 30)	12.7	42.5	30.9	23.4
3	(n = 8)	13.3	40.7	28.8	4.6
					Total Body Fat Lost = 28

[a] Phase during study.
[b] Number of participants during each phase of study.
[c] Minimum weight or body fat percentage of participants during each phase.
[d] Maximum weight or body fat percentage of participants during each phase.
[e] Mean weight or body fat percentage of participants during each phase.
[f] Weight lost from phase 1 to phase 2 and from phase 2 to phase 3.
[g] Body fat percent lost from phase 1 to phase 2 and from phase 2 to phase 3
* Denotes significant different between phase 1 to phase 2, p = .02

Table 2
Major themes of goals set by participants.

Theme[a]	Percentage of participants who set goal[b]
Lose weight	76.2%
Eat healthy or have good nutrition	54%
Exercise routine (learning how and proper techniques)	36.5%
Have a healthier lifestyle	31.7%
Get toned or muscle building	27%
Lose body fat percent	22.2%
Gain self confidence, self-esteem, or mental health	19%
Physical fitness, energy, stamina, and endurance	19%
Lower pant size and lose inches	14.3%
Maintenance of these behaviors	12.7%
Other	12.7%
Improve body image	9.5%
Portion sizing	7.9%
Reduce health risk	4.8%

[a] Goals set by participants categorized into major themes.
[b] Percentage of participants who set that particular goal.

Those who set weight loss goals (n = 21) lost more weight (M = 2.3 pounds) between the initial and middle phases than the seven participants who did not set a weight loss goal (M = .49 pounds), $t(26) = 1.12$, $p = .275$. Those participants who completed the entire study and set a weight loss goal (n = 7, M = 3.4 pounds) did not lose significantly more weight than the participants who did not set a weight loss goal (M = 8.7 pounds), $t(6) = .89$, $\infty = .408$. These results are similar to previous research conducted. Goal-setting research has shown people who set short term and proximal weight loss goals will lose more weight than those who participate in weight loss without setting a weight loss goal (Shilts, Horowitz, & Townsend, 2004; Smith, Hauenstein, & Buchanan, 1996). Further, Baron and Watters (1981) revealed three goal-setting groups lost significantly more weight than the groups who did not set a goal during their study.

Table 3
Participants who did and did not set weight loss goals

Variable	Participants	ΔWeight (pounds)
	Initial to Middle Phase	
Set weight loss goal	21	2.3
Did not set weight loss goal	7	.49
	Completed Entire Study	
Set weight loss goal	7	3.4
Did not set weight loss goal	1	8.7

CHAPTER 5

SUMMARY, CONCLUSIONS, LIMITATIONS, RECOMMENDATIONS & IMPLICATIONNS

Summary

The purpose of the study was to measure the effectiveness of "The Biggest Loser" on health lifestyles of college students with the intent of participants making behavioral changes to become nutritionally and physically healthier.

Three research questions and hypotheses for each question were addressed in this study.

1) To what extent does attending nutrition education programs provide assistance making a positive behavior and attitude change toward a healthy lifestyle?
    a. Those who attend a higher number of presentations will have an increase in physical activity compared to those who attended fewer presentations.
    b. Participation in "The Biggest Loser" program will lead to positive changes in the participants eating attitudes and behavior as measured by the EAT-26 (Garner & Garfinkel, 1979).
2) To what extent does a weight loss program assist the traditional college-age student in losing weight and body fat?
    a. Weight and body fat percentage will decrease after participation in "The Biggest Loser".
3) To what extent does setting goals assist the participant of the weight loss program in losing more weight?

a. If weight loss is related to goal setting, then people who set weight loss goals will lose more weight.

A review of literature revealed several barriers that exist for the college aged population to attain a nutritionally and physically healthy lifestyle. The literature review focused on why a program is needed to assist college students to become nutritionally and physically healthier. This included addressing barriers college students encounter in displaying healthy dietary and physical activity behaviors, recognizing disordered eating attitudes and behaviors, and the intervention of nutrition education programs and goal setting in assisting behavior changes for healthier lifestyles based on a behavior modification theory.

Conclusions

Question 1: To what extent does attending nutrition education programs provide assistance in making a positive behavior and attitude change toward a healthy lifestyle? For this question there were two hypotheses.

- First, those who attend a higher number of presentations will have a more positive physical activity change than those who attend fewer presentations. This hypothesis was not supported due to low participation rates not allowing enough data to be collected to make a correlation.
- Second, the hypothesis participation in "The Biggest Loser" will lead to positive changes in the participants' eating attitudes and behavior as measured by the EAT-26 (Garner & Garfinkel, 1979). This hypothesis was supported. The significance ($p = .03$) resulting from the one way t-test for independent samples determined that

the campaign had a positive effect on the participant's EAT-26 (Garner & Garfinkel, 1979) scores, meaning the scores increased.

Question 2: Does a weight loss program aid in the traditional college age student losing weight and body fat?

- The hypothesis was weight and body fat percentage will decrease after participation in "The Biggest Loser". From the initial phase to the middle phase, a significant (p = .02) total weight loss of 63 pounds did occur. From the middle phase to the final phase, a significant weight loss did not occur. A total of 90 pounds and 28% body fat percentage were lost from the initial phase to the final phase of the study.

Question 3: Does setting goals assist the participant of the weight loss program in losing more weight?

- The hypothesis was that if weight loss is related to goal setting, then people who set weight loss goals will lose more weight. This hypothesis was supported. Those who set weight loss goals lost an average of 2.3 pounds between the initial and middle phases, while participants who did not set a weight-loss goal lost an average of .49 pounds. Those who completed the entire study and set a weight-loss goal lost an average of 3.4 pounds.

Limitations

A limitation for this study was the majority of the participants were female (83%) as compared to EIU's total female population (58%) (Planning and Institutional Studies, 2006). Additionally, female students (59.8%) are more likely than male (29.6%) students to attempt weight loss according to the Youth Risk Surveillance Survey (1995).

The participants were part of a convenience sample and were also a very small sample size, thus it cannot be said with confidence that the individuals are representative of the university or population as a whole. Eighty-eight participants began the study, eight students completed the ten-week study, and eleven participants returned the completed posttest. Lipsey's Sample Size Table found that a minimum of 65 participants were needed in the study to attain a power to reject the hypothesis testing (Creswell, 2008). This smaller sample size has a poor precision and does not allow for statistically significant conclusions. A larger sample for the study would have less potential for error that the sample will be different from the population and would lead to more accurate parameter estimates.

Additionally, a majority of the participants did withdraw at various points throughout the study. The main reason given by participants for withdrawal was being too busy to attend presentation/programs and/or participation in physical activity, supporting what was evidenced in the literature review. Other rationale for participants revoking participation includes a knee injury, lack of time management, and illness.

The final phase of the study was after the week-long holiday break during the fall semester. This may have caused some students to not return or forget about the final phase. Research is limited on the creation, implementation, and evaluation of weight loss programs targeted towards the college age population.

Recommendations

"The Biggest Loser" is a pilot study. A suggestion for future weight loss programs includes completion before holiday or other breaks. If the program is conducted in the spring, the program should be completed before spring break.

An organized physical activity component needs to be implemented with the weight loss program. A personal trainer from the student recreation center, a local hospital, the physical education department, or the community is suggested for this component.

Nutrition education plays a vital role in assisting with weight-loss. Nutrition topics need to be relevant for the college-age population. A series of classes, with relevant nutrition topics should include various teaching strategies such as hands-on activities, interactive websites, group discussions, and diverse teaching methods.

Additionally, more research needs to be conducted concerning the barriers, influences, and perceived dietary and physical activity beliefs of college students. This information should be implemented into nutrition education.

Implications

The results of this study have several practical implications. First, it is perhaps most important for students to recognize that seemingly minor changes in dietary behavior and physical activity behavior over time result in large changes in weight and body fat percentage.

More research needs to be conducted to assess dietary behavior, physical activity, and weight loss programs among the college age population. This will allow for health educators to target programs to prevent weight gain, assist in weight loss, and educate students on the benefits of becoming nutritionally and physically healthy.

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The Biggest Loser: You Gotta Lose It To Win It
Pretest

Current Weight	Height	Age	Gender

☐ **Individual** ☐ **Team**

1) Do you feel your diet is nutritionally balanced? **Yes / No**

2) Are you currently following any special diet(s)? **Yes / No**

If so, please describe diet:

_____

_____

3) Have you ever tried a weight loss diet before? **Yes / No**
Explain:_____

4) What is your current physical activity level?
(place an "X" in the box that best describes your daily activity level)

- **Sedentary**:
  - This activity level consists of the bare minimum; most time is spent at rest, lying down or sitting with minimal movement (i.e.; watching TV, reading, studying…).

- **Lightly Active**:
  - This activity level includes most office workers, professionals, and students; daily activities consist of approximately 8 hours of sleep and 16 hours awake, including 3 hours of light activity (i.e.; walking, house chores, cooking…) and 1 hour of moderately intense activity (i.e.; running, rollerblading, walking briskly…)

- **Moderately Active**:
  - This activity level includes most people who work in manual labor fields (i.e.; carpentry, construction, or building trades) and/or those people who average 1 ½ - 2 hours of moderate exercise 3 or more times per week (i.e.; elliptical machine, weight lifting, running…)

- **Very Active**:
  - This activity level includes most full-time athletes or others who are involved in very strenuous activity on a daily basis.

5) What do you believe a weekly healthy weight loss should be? _____pounds

6) Have you ever been diagnosed with an eating disorder? **Yes / No**

7) What are some health topics that you are interested in learning more about?

_____

_____

_____

8) What do you hope to gain from this program?

_____

_____

_____

_____

_____

9) How did you hear about The Biggest Loser: You Gotta Lose It To Win It Program?

_____

_____

10) Do you have any questions regarding The Biggest Loser: You Gotta Lose It To Win It Program?

_____

_____

_____

Answer the questions using one of the following responses:

A= Always U=Usually O= Often
S=Sometimes R=Rarely N= Never

— 1. I am terrified about being overweight
— 2. I avoid eating when I am hungry
— 3. I find myself preoccupied with food.
— 4. I have gone on eating binges where I feel that I may not be able to stop.
— 5. I cut my food into very small pieces.
— 6. I am aware of the calorie content of the foods I eat.
— 7. I particularly avoid foods with a high carbohydrate content.
— 8. I feel that others would prefer if I ate more.
— 9. I vomit after I have eaten.
— 10. I feel extremely guilty after eating.
— 11. I am preoccupied with a desire to be thinner.
— 12. I think about burning up calories when I exercise.
— 13. Other people think I am too thin.
— 14. I am preoccupied with the thought of having fat on my body.
— 15. I take longer than other people to eat my meals.
— 16. I avoid foods with sugar in them.
— 17. I eat diet foods.
— 18. I feel that food controls my life.
— 19. I display self-control around food.
— 20. I feel that others pressure me to eat.
— 21. I give too much time and thought to food.
— 22. I feel uncomfortable after eating sweets.
— 23. I engage in dieting behavior.
— 24. I like my stomach to be empty.
— 25. I enjoy trying new rich foods.
— 26. I have the impulse to vomit after meals.

If you have any questions, feel free to contact the Nutrition Education Coordinator at 581-7786 or at mamccallister@eiu.edu

Participant Number:_____

GOALS LIST

Please list the top three goals you hope to achieve with your participation in The Biggest Loser: You Gotta Lose It to Win It campaign.

1)_____

_____

_____

2)_____

_____

_____

3)_____

_____

_____

Please turn completed form into the Health Education Resource Center located on the 3rd floor of the Student Services Building by FRIDAY, SEPTEMBER 29, 2006.

Biggest Loser

Participant Number	Screening	Height	Weight	BMI	BIA
1	1				
	2				
	3				
2	1				
	2				
	3				
3	1				
	2				
	3				
4	1				
	2				
	3				
5	1				
	2				
	3				
6	1				
	2				
	3				
7	1				
	2				
	3				
8	1				
	2				
	3				
9	1				
	2				
	3				
10	1				
	2				
	3				

The Biggest Loser: You Gotta Lose It to Win It
Presentation Attendance

Program	Attendance Stamp

If you have any questions, feel free to contact the Nutrition Education Coordinator at 217.581.7786 or at mamccallister@eiu.edu

Participant Number:_____

The Biggest Loser: You Gotta Lose It to Win It
Posttest

Current Weight	Height	Age	Gender
_____	_____	_____	_____

☐ **Individual** ☐ **Team**

1) What did you gain from The Biggest Loser: You Gotta Lose It To Win It program?

_____

_____

_____

_____

2) Were your goals achieved during The Biggest Loser: You Gotta Lose It To Win It program? **Yes / No**

Explain:_____

_____

_____

3) If offered, would you participate in this program again? **Yes / No**

4) What can be changed to better The Biggest Loser Program?

_____

_____

_____

_____

5) What other programs would you like to see from the Health Education Resource Center?

_____

_____

_____

_____

Answer the questions using one of the following responses:

A= Always U=Usually O= Often
S=Sometimes R=Rarely N= Never

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— 2. I avoid eating when I am hungry
— 3. I find myself preoccupied with food.
— 4. I have gone on eating binges where I feel that I may not be able to stop.
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— 6. I am aware of the calorie content of the foods I eat.
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— 22. I feel uncomfortable after eating sweets.
— 23. I engage in dieting behavior.
— 24. I like my stomach to be empty.
— 25. I enjoy trying new rich foods.
— 26. I have the impulse to vomit after meals.

6) What is your current physical activity level?
(Place an "X" in the box that best describes your daily activity level)

- ❑ **Sedentary**:
  - o This activity level consists of the bare minimum; most time is spent at rest, lying down or sitting with minimal movement (i.e.; watching TV, reading, studying…).

- ❑ **Lightly Active**:
  - o This activity level includes most office workers, professionals, and students; daily activities consist of approximately 8 hours of sleep and 16 hours awake, including 3 hours of light activity (i.e.; walking, house chores, cooking…) and 1 hour of moderately intense activity (i.e.; running, rollerblading, walking briskly…)

- ❑ **Moderately Active**:
  - o This activity level includes most people who work in manual labor fields (i.e.; carpentry, construction, or building trades) and/or those people who average 1 ½ - 2 hours of moderate exercise 3 or more times per week (i.e.; elliptical machine, weight lifting, running…)

- ❑ **Very Active**:
  - o This activity level includes most full-time athletes or others who are involved in very strenuous activity on a daily basis.

7) Has you activity level changed since starting The Biggest Loser: You Gotta Lose It To Win It?
(Place an "X" in the box that best describes your activity level since beginning the program)

□Increased □Stayed the Same □ Decreased